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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/786,352	03/13/2001	Mirosław Z Bober	204207US2PCT	8286

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FALLS CHURCH, VA 22040-0747

EXAMINER
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DESIRE, GREGORY M

ART UNIT	PAPER NUMBER
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2624

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	02/07/2007	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 02/07/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

<b>Office Action Summary</b>	Application No. 09/786,352	Applicant(s) BOBER, MIROSLAW Z	
	Examiner Gregory M. Desire	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12/21/06.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3, 6-10 and 25-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6-10 and 25-36 is/are rejected.
- 7) ☒ Claim(s) 37 and 38 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>12/21/06</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/26/06 has been entered.

### ***Response to Arguments***

Applicant argues (remarks page 4 lines 8-9) Abassi fails to disclose or suggest deriving the eccentricity of the smooth version of the original object outline as claimed. This argument is not persuasive because it is the position of the examiner Abassi does disclose deriving the eccentricity of the smooth version of the original object outline (Note Abassi et al, page 290-291 paragraph 5 lines 1-15 lines describes additional parameter as eccentricity of CSS image which is shape dependent). Abassi discloses deriving eccentricity as shape feature region based using region points and centroid to find eigenvalues and eigenvalues is used to calculated eccentricity. Examiner

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interprets, used of maximum coordinates of a smooth version can be used to derive eccentricity of a smooth version of the original object outline.

***Claim Rejections - 35 USC § 101***

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 8, 10, 19 and 20 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows.

The USPTO "Interim Guidelines for Examination of Patent applications for Patent Subject Matter Eligibility" (Official Gazette notice of 22 November 2005), Annex IV, reads as follows:

Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." In this context, "functional descriptive material" consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific data manipulation functions." The New IEEE standard Dictionary of Electrical and Electronics Terms 308 (5<sup>th</sup> ed. 1993).) "Nonfunctional descriptive material" includes but is not limited to music, literary works and a compilation or mere arrangement of data.

When function descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permit function of the descriptive material to be realized. Compare *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) (claim to data structure stored on a computer readable medium that increases computer efficiency held statutory) and *Warmerdam*, 33 F. 3d at 1360-61, 31 USPQ2d at 1759 (claim to computer having a specific data structure stored in memory held product-by-process claim) with *Warmerdam*, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory).

In contrast, a claimed computer readable medium encoded with a computer program is a computer element which defines structural and function interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory, See *Lowry*, 32 F. 3d at 1583-84, 32 USPQ2d at 1035.

Claim 36 defines instructions embodying functional descriptive material. However, the claims do not define a computer readable medium or memory and is thus non-statutory

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for that reason (i.e., "When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized: -Guidelines Annex IV). That is, the scope of the presently claimed instructions. The examiner suggests amending the claim to embody the instructions on "computer-readable medium" or equivalent in order to make the claim statutory. Any amendment to the claim should be commensurate with its corresponding disclosure.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-3, 6-10, 25-27 and 37-38 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
6. Claims 1 and 10 recite the limitation "a smooth version of the original object outline" in line 6 in claim 1 and line 7 in claim 10. There is insufficient antecedent basis for this limitation in the claim.

It is unclear from the claims whether "a smooth version of the original object outline" is the CSS representation derived by smoothing the object outline or is it

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another smooth version of the original object outline. Claims 2-3, 6-9, 25-27 and 37-38 depend on claims 1 and 10. Therefore are also rejected.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-3, 6-10 and 25-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abbasi et al "Reliable Classification of Chrysanthemum Leaves through Curvature Scale Space".

Regarding method and apparatus claims 1, 10, 33 and 36 Abbasi discloses,

Deriving a curvature scale space representation of the object outline by smoothing the object outline (note page 287 paragraph 4 lines 2-12, curvature space representation derived by Gaussian smoothing),

Deriving at least one additional parameter reflecting the shape or mass distribution (note paragraph 5 global parameters page 290- 291 lines 1-10, shows how eccentricity is derived which is a parameter reflecting shape).

Associating the CSS representation and the additional parameter as shape of the object (note page 291 lines 6-10, eccentricity is based on eigenvalues which depends

on shape and page 289 lines 1-13, associates the zero crossing of css representation as points that are shape descriptors);

Wherein the at least one additional parameter corresponds to the eccentricity of the outline (note page 290-291 paragraph 5 lines 1-15 lines describes additional parameter as eccentricity which is shape dependent).

Abbasi paragraph 4 and 5 does not clearly disclose the associating a smooth version of original curve with eccentricity. Abbasi discloses associating a smooth version or original curve with eccentricity (note paragraph 6, classifying based CSS matching, choosing global parameters which include eccentricity that are similar and applying css matching). Abbasi paragraphs 4, 5 and 6 are combinable because they are from same article of Curvature Space Scales. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to associate CSS with eccentricity in the system of Abbasi as evidenced by Abbasi. The suggestion/motivation for doing so would have been classifying images (note paragraph 6). Therefore, it would have been obvious to combine Abbasi with Abbasi to obtain the claimed invention.

Regarding method claim 2 Abbasi discloses,

Wherein an additional parameter relates to the smoothed outline corresponding to a peak in the CSS image (note page 291 lines 16-19, aspect ratio describes an additional parameter corresponds to height (peak).

Regarding method claim 3 Abbasi discloses,

Wherein an additional parameter relates to the smoothed outline corresponding to the highest peak in the CSS image (note page 291 lines 16-19, aspect ratio describes maximum height, thus highest peak).

Regarding method claim 6 Abbasi discloses,

Wherein at least one additional parameter uses a region-based representation (note page 290, paragraph 5 lines 3-4, eccentricity is region based parameter).

Regarding method claims 7 and 9 Abbasi discloses,

Wherein an additional parameter is a region moment invariant (note page 290, paragraph 5 lines 4-7 eccentricity defines region moment).

Regarding method claim 8 Abbasi discloses,

Wherein an additional parameter is based on Fourier descriptor (note page 290, paragraph 4.3, shape descriptor is well known Fourier descriptor).

Regarding apparatus claim 25 Abbasi discloses,

Deriving a representation of an object in an image comprising a control device and storage area (note page 285 lines 10-13, computer system contains storage area and control device).

Regarding apparatus and method claims 26 Abbasi discloses,



Wherein the storage area is an image database (note page 289, paragraph 4.2 lines 1-2, shape stored in a database)

Regarding apparatus claim 27 Abbasi discloses,

A display (note page 285 lines 10-13, computer system contains storage area, control device and display).

Regarding method claims 28, 31-32 and 34-35 Abbasi discloses,

Determining curvature scale space representation for an object outline to generate a plurality of curve representative of said outline (note section 4 page 288 last paragraph and fig. 3 shows curve scale space representation of contour); and

Determining characteristics associated with said outline including peaks and associated peak coordinates for said plurality of curves to generate a shape descriptor for said outline (note page 289 lines 1-13, examiner interprets maximum as peaks and their points as peak coordinates, which are described as shape descriptors). Section 4 does not clearly disclose determining characteristic associated with said outlined including eccentricity. Section 5 discloses determining characteristic associated with outlines including eccentricity (page 290, section 5 line 1-page 291 line 6, shows formula for eccentricity and describes as being used a shape feature, which is region based, how region points are scattered around centroid). Section 4 and 5 are combinable because they are from the same article. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include eccentricity

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characteristic in an outline. The suggestion/motivation for doing so would have been important characterizing shape features of an outline, since eccentricity solely depend on the on shape. Therefore, it would have been obvious to combine section 4 and section 5 of Abbasi to obtain the invention as specified in claim 28.

Regarding apparatus and method claim 29, 31 and 34-35 Abbasi discloses,

Wherein the storage area is an image database (note page 289, paragraph 4.2 lines 1-2, shape stored in a database)

Regarding method claim 30 Abbasi discloses,

Wherein said determining a curvature scale space representation includes determining zero crossing points for an initial set of curves generated to produce said plurality of curves representative of said outline (note page 287-289 paragraph 4 describes zero crossing).

### ***Allowable Subject Matter***

9. Claims 37-38 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory M. Desire whose telephone number is (571) 272-7449. The examiner can normally be reached on M-F (6:30-3:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on (571) 272-7778. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Gregory M. Desire  
Examiner  
Art Unit 2624



G.D.  
February 1, 2007